



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/765,431	01/26/2004	Mats Oberg	MP0148 . I	1982
26703	7590	05/05/2006	EXAMINER	
HARNESS, DICKEY & PIERCE P.L.C. 5445 CORPORATE DRIVE SUITE 400 TROY, MI 48098			YOUNG, BRIAN K	
			ART UNIT	PAPER NUMBER
			2819	

DATE MAILED: 05/05/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/765,431

Applicant(s)

OBERG ET AL.

Examiner

Brian Young

Art Unit

2819

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 08 February 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-106 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 18-35 and 71-88 is/are allowed.
- 6) ☒ Claim(s) 1,3-5,8,9,36,40,44,45,54,56-58,61,62,89,93,97 and 98 is/are rejected.
- 7) ☒ Claim(s) 2,6,7,10-17,37-39,41-43,46-53,55,59,60,63-70,90-92,94-96 and 99-106 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 2/8/06.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_.

### Detailed Action

1. The IDS filed on 2/8/06 has been received and considered.

#### 35 U.S.C. 102 Rejection

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. **Claims 1,3,4,5,8,9,36,40,44,45,54,56,57,58,61,62,89,93,97 and 98** are rejected under 35 U.S.C. 102(b) as being anticipated by Tokumme et al.

**Regarding claims 1,36,54 and 89** Tokume et al disclose (fig.7) an encoder comprising: a buffer (32) for buffering a communication data signal, a DC check circuit (34,35 and 36) for computing a metric of the data, a DC tracking block (41,42,43,45 and 47) that generates a flip signal (output of 43) as a function of the metric, the flip signal having a flip state (invert) and a nonflip state (non-invert) and a flip device (46) that selectively flips a bit ( $W_1$ ) in the buffer to reduce an average DC value of the communication signal wherein the average DC value of the communication signal approaches zero.

Tokuume et al recites (col. 18, Ins. 23-50):

“The operation to produce the Dc-free codes on one-code unit basis, namely, on a lo-bit unit basis is performed and the variation range of the DSV (Digital Sum Variation) is

Art Unit: 2819

made small and thereby **producing the Dc-free codes** having a large effect of suppression of the DC variation. FIG. 7 is an arrangement block diagram for encoding.

STEP 1: Set DSV=0 and P=0.

STEP 2: Convert the 8-bit data to the 10-bit codes (named W and the head bit of the W is named W.sub.1) by the foregoing coding systems.

STEP 3: Calculate the CDS.

STEP 4: (i) If P=0 and sign Dsv=sign CDS, invert the W.sub.1 and set DSV=DSV-CDS.

(ii) If P=0 and sign Dsv.noteq.sign CDS, set DSV=DSV+CDS without inverting the W.sub.1."

**Regarding claims 3, 40, 56 and 93** the ROM Table (31) anticipates the claimed "precoder".

**Regarding claims 4 and 57**, Tokume et al recite that the device is used with "a magnetic disk or an optical disk" (see abstract) therefore the data would be divided into "sectors".

**Regarding claims 5 and 58** the data words being buffered would be considered "code words".

Art Unit: 2819

**Regarding claims 8,44,61 and 97**, the “flip bit” (fig. 7, W1) would be (inverted/ non-inverted) as the data is fed through the buffer a specific length of bits (“k” for example) at a time.

**Regarding claims 9,45,62 and 98** Tokuume et al disclose (fig.7) two DC check circuits (35 and 36) for each “flip” bit (W1) used.

4. **Claims 2,6,7,10-17,37-39,41-43,46-53,55,59,60,63-70,90-92,94-96, and 99-106** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

5. **Claims 18-35 and 71-88** are allowed.

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Ordentlich discloses a two-dimensional DC-free encoder.


Busby discloses a method of dc-free 8/9-nrz (non return to zero) coding.

Art Unit: 2819

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian Young whose telephone number is 571-272-1816. The examiner can normally be reached on Mon-Fri 7:30-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rexford Barnie can be reached on 571-272-7492. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Brian Young  
Primary Examiner  
Art Unit 2819

\*\*\*